ABSTRACT OF THE DISCLOSURE

Numbers 1, 2, ..., M are assigned to bidding prices from the minimum to maximum values V_1 to V_N. For a bidding value V_{vi} each user 11-i generates two sequences of information $s_i=\{s_{i,1}, s_{i,2}, ..., s_{i,M}\}$ and $t_i=\{t_{i,1}, t_{i,2}, ..., t_{i,M}\}$ such that $s_{i,1}=t_{i,1}, ..., s_{i,vi-1}= t_{i,vi-1}, s_{i,vi}\neq t_{i,vi}, ..., s_{i,M}\neq t_{i,M}$, then secretly sends the two sequences of information s_i and t_i to quantitative competition apparatuses 15A and 15B, respectively, and sends hash values $H1_i=h(s_i)$ and $H2_i=h(t_i)$ of the two sequences of information s_i and t_i and a hash value $h(V_{vi}||r_i)$ containing an intended value V_{vi} to a bulletin board apparatus 21. The quantitative competition apparatuses 15A and 15B extract w-th elements $s_{i,w}$ from respective sequences s_1 to s_N and w-th elements $t_{i,w}$ from respective sequences t_1 to t_N, then create a concatenation $Seq_{s,w}$ of N elements $s_{i,w}$ and a concatenation $Seq_{t,w}$ of N elements $t_{i,w}$, then compare them using a one-way function without revealing their values, and, if they differ, deciding that the intended value V_{vi} equal to or smaller than a value V_w is present, and determines the minimum value by changing w.